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TITLE: INFORMATION REPRODUCTION METHOD  
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INT-CL (IPC): G06F012/00, G06F012/00

ABSTRACT:

PROBLEM TO BE SOLVED: To provide an information reproduction method capable of reading the history of the directory information of an updating file.

SOLUTION: In order to reproduce the history of the directory information by specifying a desired file name from the state of recording the directory information accompanying file updating in a directory area corresponding to the file name of the updating file, all the directory information of the directory area is read (step 302), different unique identifiers (date and time information) are imparted to all the file names of the

part

updating file matched  
with the specified file name and a new file name is  
generated (steps 303-309).  
Thereafter, by instructing the new file name to which the  
unique identifier is  
imparted, the directory information corresponding to the  
file name of the  
updating file is reproduced (steps 310 and 311).

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# PATENT ABSTRACTS OF JAPAN

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(72)Inventor : HOSAKA NAOKI

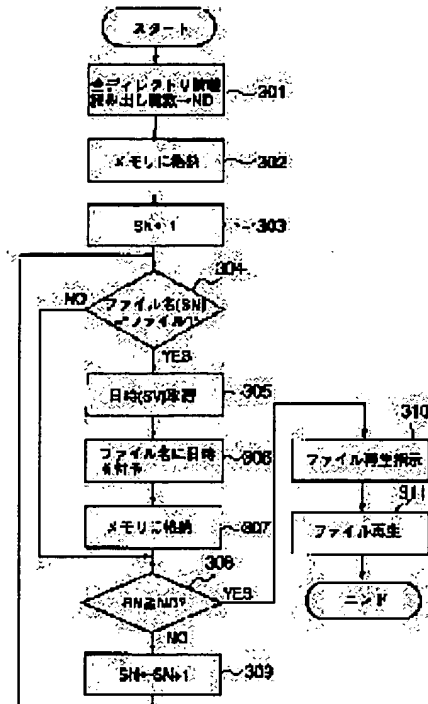
## (54) INFORMATION REPRODUCTION METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an information reproduction method capable of reading the history of the directory information of an updating file.

SOLUTION: In order to reproduce the history of the directory information by specifying a desired file name from the state of recording the directory information accompanying file updating in a directory area corresponding to the file name of the updating file, all the directory information of the directory area is read (step 302), different unique identifiers (date and time information) are imparted to all the file names of the updating file matched with the specified file name and a new file name is generated (steps 303-309).

Thereafter, by instructing the new file name to which the unique identifier is imparted, the directory information corresponding to the file name of the updating file is reproduced (steps 310 and 311).



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

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**CLAIMS**

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[Claim(s)]

[Claim 1] The homepage managerial system of the Internet characterized by a worldwide web server transmitting only the portion which had change from the homepage which received in the past when the revision information on a homepage is used between the worldwide web server connected to the Internet, and a browser and the aforementioned browser displays the aforementioned homepage.

[Claim 2] The homepage managerial system of the Internet according to claim 1 characterized by providing the following. The updating management database which memorizes the revision of the history file which memorizes the newest revision of the newest homepage and the newest aforementioned homepage, and the content of updating of a homepage, and the aforementioned history file. The renewal section of a homepage which updates the aforementioned updating management database. The worldwide web server connected to the Internet equipped with the history reference section which searches the aforementioned updating management database. The browser connected to the Internet equipped with the cache management database which memorizes the homepage address of the homepage which received in the revision and the aforementioned past of the homepage which received in the past, and the homepage which received in the aforementioned past, the renewal section of a cache which updates the aforementioned cache management database, and the cache reference section which searches the aforementioned cache management database.

[Claim 3] The homepage managerial system of the Internet according to claim 1 characterized by providing the following. The updating management database which memorizes the revision of the history file which memorizes the newest revision of the newest homepage and the newest aforementioned homepage, and the contents of updating of a homepage, and the aforementioned history file. Register the updated homepage into the newest aforementioned homepage, and the revision of the homepage by which updating was carried out [ aforementioned ] is registered into the aforementioned newest revision. Register the contents of renewal of a homepage into the aforementioned history file, and the revision of the homepage before updating is registered into the aforementioned history revision. When the capacity of the aforementioned history file registered into the aforementioned history file is totaled and the sum total of the capacity of the aforementioned history file exceeds the capacity of the aforementioned newest homepage The renewal section of a homepage controlled so that the aforementioned history file and the aforementioned history revision are deleted from the one where the numeric value of the aforementioned history revision is lower and the sum total of the capacity of the aforementioned history file does not exceed the capacity of the aforementioned newest homepage. The worldwide web server connected to the Internet equipped with the history reference section which searches the aforementioned updating management database. The browser connected to the Internet equipped with the cache management database which memorizes the homepage address of the homepage which received in the revision and the aforementioned past of the homepage which received in the past, and the homepage which received in the aforementioned past, the renewal section of a cache which updates the aforementioned cache management database, and the cache reference section which searches the aforementioned cache management database.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] Especially this invention relates to the homepage managerial system of the Internet which performs efficiently data transfer between a worldwide web server and a browser about the homepage managerial system of the Internet.

[0002]

[Description of the Prior Art] When saving the homepage by which data transfer was carried out to the past from the worldwide web server at a local cache file temporarily and carrying out data transfer of the same homepage again, the conventional browser which displays the homepage of the Internet displayed the homepage saved at the cache file, accelerated the display of a homepage by not performing data transfer, and has suppressed passing an excessive packet on the Internet.

[0003] moreover, technology given in "JP,6-187206,A" -- the management method of a file -- it is -- the difference of a base file and a version file -- it is the technology of managing renewal of a file using information

[0004] Moreover, technology given in "JP,6-202926,A" is the technology of managing the file access which manages efficiently the access operator of a file who owns jointly between a network, and an operation file, and both are not related with the homepage of the Internet.

[0005]

[Problem(s) to be Solved by the Invention] in a Prior art, since the 1st trouble is not understood whether the homepage which is a World-Wide-Web (it is henceforth described as WWW) server was updated by the visitor when a browser displays the homepage saved by the homepage which has carried out data transfer to the past at the cache file, it is being unable to judge whether the displayed homepage being the same as that of the homepage on a WWW server For this reason, a visitor will require time, before data transfer of the newest homepage will be again carried out from a WWW server and a visitor peruses the newest target homepage, in order that the content of the homepage displayed from the cache file may check in the newest.

[0006] The 2nd trouble is that the completely same data as a cache file will be transmitted, and a useless packet flows on the Internet with directions of a visitor although it is possible to carry out data transfer of the homepage of a WWW server, even when the homepage saved at the cache file of a browser is the same as that of the newest homepage of a WWW server, as the 1st trouble described. Therefore, the traffic on the Internet increases and a speed fall may be caused.

[0007] In the WWW server and browser on the Internet, by using the revision information on a homepage and carrying out data transfer only of the change portion, this invention shortens time until it peruses a homepage by the browser, and aims at preventing the speed fall by the increase in the traffic on the Internet.

[0008]

[Means for Solving the Problem] When the revision information on a homepage is used for the homepage managerial system of the 1st Internet of this invention between the WWW server connected to the Internet, and a browser and the aforementioned browser displays the aforementioned homepage, a WWW server transmits only the portion which had change from the homepage which received in the past.

[0009] The homepage managerial system of the 2nd Internet of this invention It is the homepage managerial system of the 1st Internet of the above. The newest homepage, The updating management database which memorizes the revision of the history file which memorizes the newest revision of the newest aforementioned homepage, and the content of updating of a homepage, and the aforementioned history file, The WWW server connected to the Internet equipped with the renewal section of a homepage which updates the aforementioned updating management database, and the history reference section which searches the aforementioned updating management database, The cache management database which memorizes the homepage address of the homepage which received in the revision and the aforementioned past of the homepage which received in the past, and the homepage which received in the aforementioned past, It has the browser connected to the Internet equipped with the renewal section of a cache which updates the aforementioned cache management database, and the cache reference section which searches the aforementioned cache management database.

[0010] The homepage managerial system of the 3rd Internet of this invention It is the homepage managerial system of the 1st Internet of the above. The newest homepage, The updating management database which memorizes the revision of the history file which memorizes the newest revision of the newest aforementioned homepage, and the content of updating of a homepage, and the aforementioned history file, Register the updated homepage into the newest aforementioned homepage, and the revision of the homepage by which updating was carried out [ aforementioned ] is registered into the aforementioned newest revision.

Register the content of renewal of a homepage into the aforementioned history file, and the revision of the homepage before updating is registered into the aforementioned history revision. When the capacity of the aforementioned history file registered into the aforementioned history file is totaled and the sum total of the capacity of the aforementioned history file exceeds the capacity of the aforementioned newest homepage The renewal section of a homepage controlled so that the numeric value of the aforementioned history revision deletes the aforementioned history file and the aforementioned history revision from the method of a low and the sum total of the capacity of the aforementioned history file does not exceed the capacity of the aforementioned newest homepage, The WWW server connected to the Internet equipped with the history reference section which searches the aforementioned updating management database, The cache management database which memorizes the homepage address of the homepage which received in the revision and the aforementioned past of the homepage which received in the past, and the homepage which received in the aforementioned past, It has the browser connected to the Internet equipped with the renewal section of a cache which updates the aforementioned cache management database, and the cache reference section which searches the aforementioned cache management database.

[0011]

[Embodiments of the Invention] Next, the gestalt of operation of this invention is explained in detail with reference to a drawing. Drawing 1 is the block diagram of the gestalt of operation of this invention. Reference of drawing 1 constitutes the homepage managerial system of the Internet of this invention from a WWW server 1, a browser 2 which operates within a client, and the Internet 3.

[0012] The WWW server 1 used on the Internet The renewal section 11 of a homepage which manages renewal of a homepage, and the updating history database 12 which saves the content of a history and history revision of the newest homepage, and the newest revision and a homepage, It has the history reference section 13 which searches the updating history database 12. a browser 2 The cache reference section 21 which searches the homepage by which the cache is carried out, It has the content of the homepage by which the cache is carried out, the address, the cache management database 22 that manages a revision, and the renewal section 23 of a cache which updates to the newest the homepage by which the cache is carried out according to the content of updating received from the WWW server 1.

[0013] Next, operation of the gestalt of operation of this invention is explained in detail with reference to drawing 1 and 2. Drawing 2 is the block diagram showing operation of the gestalt of operation of this invention. First, updating and the management method of the homepage in the WWW server 1 are explained using drawing 2. The renewal section 11 of a homepage of the WWW server 1 will create the homepage 111 and the content 112 of renewal of a homepage which were updated, if a homepage is updated. The updated homepage 111 is registered into the newest homepage 121, and the revision of a homepage counts it up and it is registered into the newest revision 122.

[0014] On the other hand, the content 112 of renewal of a homepage is registered into the history file 123 as a history, and the revision of the homepage before updating is registered into the history revision 124. Moreover, the sum total of the capacity of the history file 123 and the capacity of the newest homepage 121 which are registered into the history file 123 are measured at this time. When the sum total of the capacity of the history file 123 exceeds the capacity of the newest homepage 121, the history file 123 and a history revision are deleted from the method of a low, and the numeric value of a history revision is made into the content by which the sum total of the capacity of the history file 123 does not exceed the capacity of the newest homepage 121.

[0015] If the reason made smaller than the capacity of the history file 123 and the capacity of the newest homepage 121 has the sum total of the capacity of the history file 123 larger than the capacity of the newest homepage 121, the direction which carried out the immediate-data transfer of the newest homepage 121 is because data transfer capacity decreases rather than transmitting the history file 123 to a browser 2.

[0016] Next, a browser 2 explains the method of presentation of the homepage of the WWW server 1 using drawing 1. When accessing a homepage by the browser 2, the cache reference section 21 notifies the revision which acquired the revision of the homepage by which the cache is carried out by using as a key the homepage address specified by the visitor, and was acquired to the WWW server 1.

[0017] The history reference section 13 uses as a key the revision notified from the browser 2, and the WWW server 1 searches the updating history database 12, it acquires the history file from the acquired revision, and transmits a history file and the newest revision to a browser 2. However, when the revision acquired from the browser 2 is not registered into the updating history database 12 at this time, the newest homepage and the newest revision are transmitted instead of a history file.

[0018] The renewal section 23 of a cache of a browser 2 registers into the revision of the cache management database 22 the newest revision which received from the WWW server 1, and updates the cache file of the cache management database 22 according to the history file which received from the WWW server 1.

[0019] And a browser 2 can display the target homepage by displaying a cache file.

[0020] Next, the example of this invention is explained with reference to a drawing. Drawing 3 is the block diagram showing the example of this invention. Reference of drawing 3 constitutes the example of this invention from a WWW server 1, and the browser 2 and the Internet 3 which peruse a homepage.

[0021] The renewal section 11 of a homepage in which the WWW server 1 manages renewal of a homepage, The updating history database 12 which saves the content of updating and history revision of the newest homepage, and the newest revision and a homepage, It has the history reference section 13 which searches the updating history database 12. a browser 2 The content of the homepage by which the cache is carried out, the address, and the cache management database 22 that manages a revision, The cache reference section 21 which searches the revision of a homepage [ finishing / reception ] with a browser 2 by using as a key the homepage address which the visitor inputted, and transmits a revision to the WWW server 1, According to the content of

updating received from the WWW server 1, the revision and cache file of a cache management database are updated, and it has the renewal section 23 of a cache which carries out the newest of the homepage.

[0022] Next, operation of the example of this invention is explained in detail with reference to drawing 3 and 4. Drawing 4 is the block diagram showing operation of the example of this invention. First, updating and the management method of the homepage in the WWW server 1 are explained using drawing 4.

[0023] The renewal section 11 of a homepage of the WWW server 1 will create the homepage 111 and the content 112 of renewal of a homepage which were updated, if a homepage is updated. The updated homepage file 111 is registered into the newest homepage 121, counts up the revision of a homepage and is registered into the newest revision 122 (drawing 4 procedure 1). (in the case of this example, a revision is set to 6)

[0024] On the other hand, the content 112 of renewal of a homepage is registered into the history file 123 as a history (drawing 4 procedure 2), and the revision of the homepage before updating is registered into the history revision 124 (drawing 4 procedure 3). In the case of this example, "5" is registered into the history revision 124 and "a history 5 (6KB)" is registered into the history file 123.

[0025] At moreover, this time The sum total (in the case of this example, set to 2KB(history 1)+13KB(history 2)+12KB(history 3)+2KB(history 4)+6KB(history 5) =35KB) of the capacity of a history file and capacity of the newest homepage 121 (in the case of this example) which are registered into the history file 123 When 32KB is measured and the sum total of the capacity of a history file exceeds the capacity of the newest homepage 121 (this example) it exceeds by 35KB > 32KB -- \*\*\*\* -- the numeric value of a history revision -- the method of a low to a history file, and a history revision -- deletion (in the case of this example) 1 of a history revision and 2 are deleted and it considers as the content by which the sum total of the capacity of a history file does not exceed the capacity of the newest homepage 121 (drawing 4 procedure 4).

[0026] this example is set to 20KB < 32KB. When this has the sum total of the capacity of a history file larger than the capacity of the newest homepage 121, it is for the direction which carried out the immediate-data transfer of the newest homepage 121 to have less data capacity rather than transmitting the history file 123 to a browser 2, and to end.

[0027] Next, the method of presentation of the homepage of the WWW server 1 by the browser 2 is explained using drawing 3. When accessing a homepage by the browser 2, the revision which acquired the revision of the homepage by which the cache is carried out by the cache reference section 21 using as a key the homepage address specified by the visitor (a revision is set to 4 in the case of this example) (drawing 3 procedure 5), and was acquired to the WWW server 1 is notified (drawing 3 procedure 6).

[0028] The history file (in the case of this example, it becomes a history 5 from a history 4) from the revision which the WWW server 1 searched the updating history database 12 by using as a key the revision to which the history reference section 13 was notified from the browser 2, and acquired is acquired (drawing 3 procedure 7), and a history file and the newest revision (in the case of this example, set to 6) are transmitted to a browser 2 (drawing 3 procedure 8).

[0029] However, when the revision acquired from the browser 2 is not registered into the updating history database 12 at this time, the newest homepage and the newest revision are transmitted instead of a history file. The renewal section 23 of a cache of a browser 2 registers into the revision of the cache management database 22 the newest revision which received from the WWW server 1, and updates the cache file of the cache management database 22 according to the history file which received from the WWW server 1 (drawing 3 procedure 9). And a browser 2 can display the target homepage by displaying a cache file.

[0030]

[Effect of the Invention] The 1st effect of this invention is that the display of the homepage displayed in the past by the browser is accelerable. The reason is that the homepage newest by updating the homepage by which it becomes unnecessary for the browser to have carried out data transfer of the whole homepage from the WWW server, it carried out data transfer only of the content of updating from the WWW server, and the cache was carried out into the browser is acquirable.

[0031] The 2nd effect is being able to prevent the speed fall by the increase in the traffic on the Internet. The reason is that it can prevent the increase in the traffic on the Internet since what is necessary is not to carry out data transfer of the whole homepage from a WWW server, and to receive only the content of updating when a browser displays a homepage.

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**TECHNICAL FIELD**

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[The technical field to which invention belongs] Especially this invention relates to the homepage managerial system of the Internet which performs efficiently data transfer between a worldwide web server and a browser about the homepage managerial system of the Internet.

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PRIOR ART

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[Description of the Prior Art] When saving the homepage by which data transfer was carried out to the past from the worldwide web server at a local cache file temporarily and carrying out data transfer of the same homepage again, the conventional browser which displays the homepage of the Internet displayed the homepage saved at the cache file, accelerated the display of a homepage by not performing data transfer, and has suppressed passing an excessive packet on the Internet.

[0003] moreover, technology given in "JP,6-187206,A" -- the management method of a file -- it is -- the difference of a base file and a version file -- it is the technology of managing renewal of a file using information

[0004] Moreover, technology given in "JP,6-202926,A" is the technology of managing the file access which manages efficiently the access operator of a file who owns jointly between a network, and an operation file, and both are not related with the homepage of the Internet.

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## EFFECT OF THE INVENTION

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[Effect of the Invention] The 1st effect of this invention is that the display of the homepage displayed in the past by the browser is accelerable. The reason is that the homepage newest by updating the homepage by which it becomes unnecessary for the browser to have carried out data transfer of the whole homepage from the WWW server, it carried out data transfer only of the contents of updating from the WWW server, and the cache was carried out into the browser is acquirable.

[0031] The 2nd effect is being able to prevent the speed fall by the increase in the traffic on the Internet. The reason is that it can prevent the increase in the traffic on the Internet since what is necessary is not to carry out data transfer of the whole homepage from a WWW server, and to receive only the contents of updating when a browser displays a homepage.

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TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention] in a Prior art, since the 1st trouble is not understood whether the homepage which is a World-Wide-Web (it is henceforth described as WWW) server was updated by the visitor when a browser displays the homepage saved by the homepage which has carried out data transfer to the past at the cache file, it is being unable to judge whether the displayed homepage being the same as that of the homepage on a WWW server. For this reason, a visitor will require time, before data transfer of the newest homepage will be again carried out from a WWW server and a visitor peruses the newest target homepage, in order that the contents of the homepage displayed from the cache file may check in the newest.

[0006] The 2nd trouble is that the completely same data as a cache file will be transmitted, and a useless packet flows on the Internet with directions of a visitor although it is possible to carry out data transfer of the homepage of a WWW server, even when the homepage saved at the cache file of a browser is the same as that of the newest homepage of a WWW server, as the 1st trouble described. Therefore, the traffic on the Internet increases and a speed fall may be caused.

[0007] In the WWW server and browser on the Internet, by using the revision information on a homepage and carrying out data transfer only of the change portion, this invention shortens time until it peruses a homepage by the browser, and aims at preventing the speed fall by the increase in the traffic on the Internet.

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the gestalt of operation of this invention.

[Drawing 2] It is the block diagram showing operation of the gestalt of operation of this invention.

[Drawing 3] It is the block diagram showing the example of this invention.

[Drawing 4] It is the block diagram showing operation of the example of this invention.

[Description of Notations]

1 WWW Server

2 Browser

3 Internet

11 Renewal Section of Homepage

12 Updating History Database

13 History Reference Section

21 Cache Reference Section

22 Cache Management Database

23 Renewal Section of Cache

121 The Newest Homepage

122 The Newest Revision

123 History File

124 History Revision

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[Translation done.]

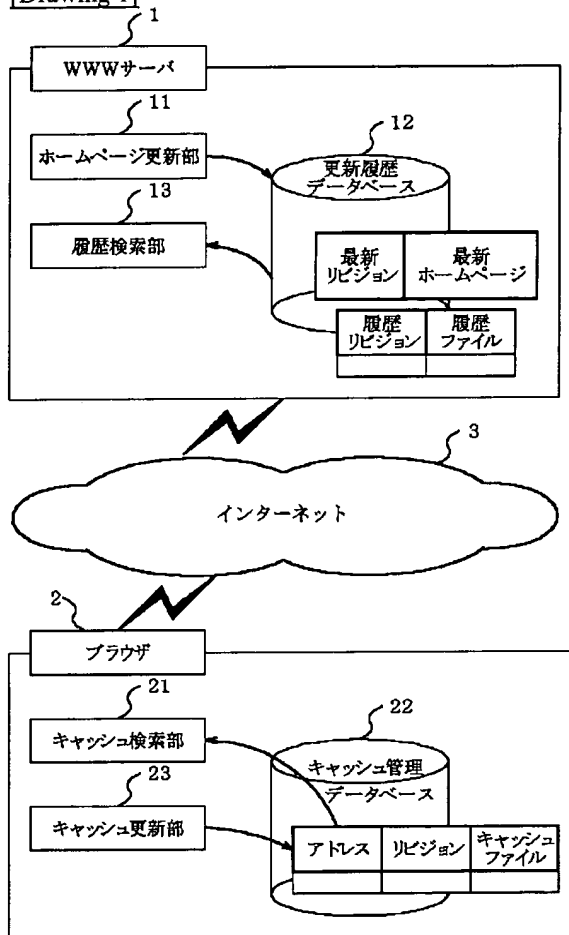
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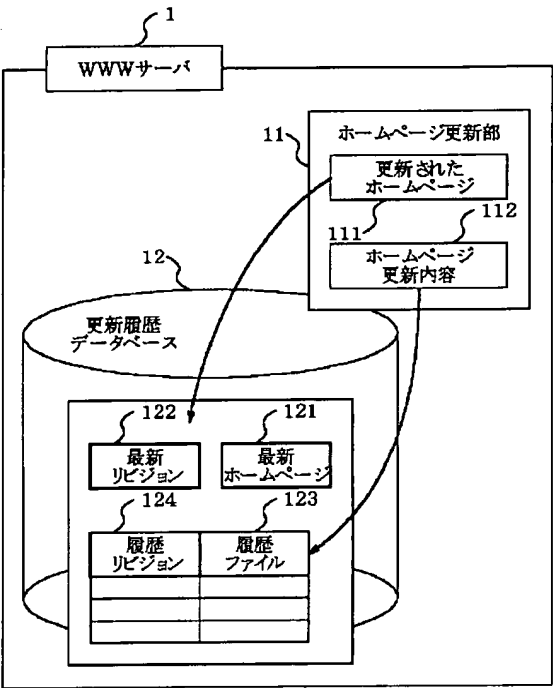
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## DRAWINGS

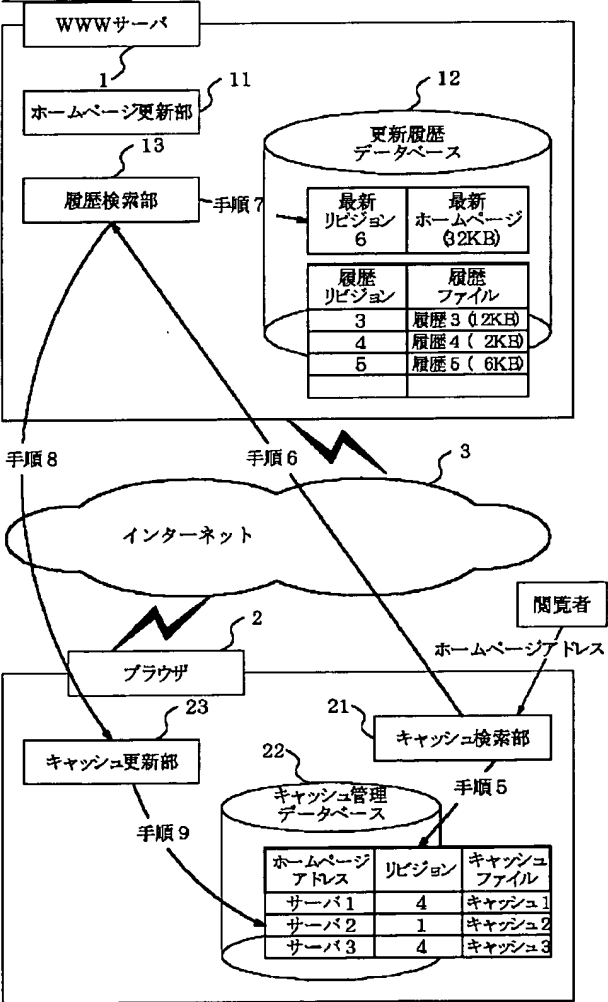
[Drawing 1]



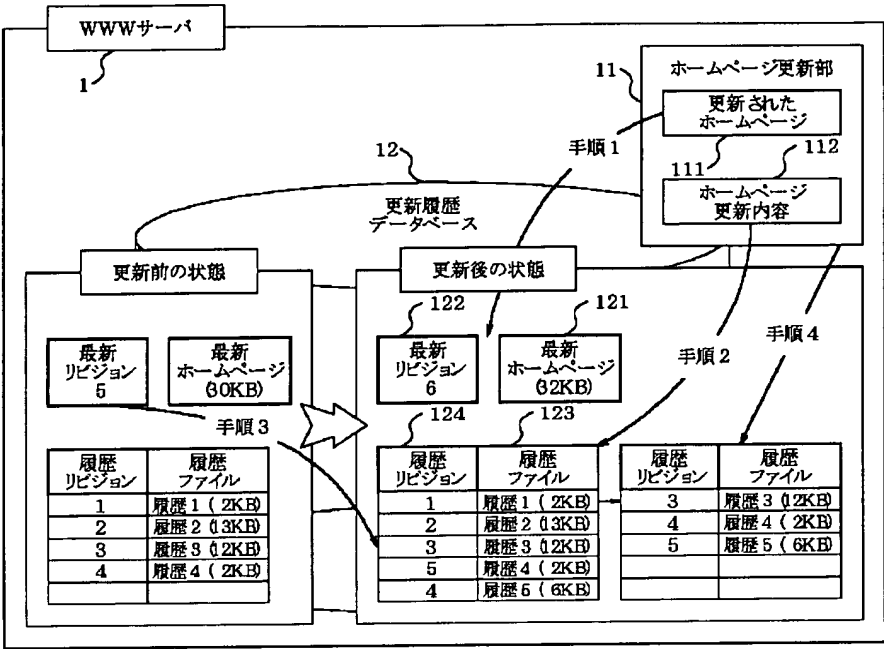
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Translation done.]